

**Amendment**

Applicant: Michael Paul Tankard

Serial No.: 10/656,821

Filed: September 5, 2003

Docket No.: K315.131.101

Title: CIRCUIT FOR USE WITH SWITCHED RELUCTANCE MACHINES

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**REMARKS**

Claims 1-15 are pending. By this Amendment, claims 1 and 14 are amended.

The September 8, 2005 Office Action rejected claims 1, 4-6, 8 and 11 under 35 U.S.C. § 102(b) over Starkie (U.S. Patent No. 6,329,785), claim 14 under 35 U.S.C. § 102(b) over Young (U.S. Patent No. 5,838,127), claims 1-13 and 15 under 35 U.S.C. § 103(a) over Young in view of Starkie, and claim 7 under 35 U.S.C. § 103(a) over Starkie. Applicant respectfully traverses these rejections.

**Current Ratings**

Each of independent claims 1, 12 and 14-15 recites a first set of switches and a second set of switches, the switches of the first set being rated for a higher current than the switches of the second set. Note the last two lines of each independent claim, for example. The prior art fails to teach or suggest this feature, in combination with the other claimed elements.

Regarding the 35 U.S.C. § 103(a) rejection of claims 1-13 and 15 over Young in view of Starkie, the Office Action refers to column 2, lines 64-66 of Starkie as showing a set of switches being rated at a higher power than another set of switches, namely Starkie's switch sets 25 and 23 (Figure 3). The Office Action states it would have been obvious to take the teaching of different power ratings in Starkie and apply this teaching to a completely different electrical device having a completely different structure and function, namely, Young's device and its switches 148, 154 and 150, 152 (Figure 2).

Young's Figure 2 and the related text actually teach away from having sets of differently rated switches. As can be seen in Young's Figure 2, the first "set" of switches 148, 154 is connected in series together with inductance 138 across the supply. Since switches 148, 154 are

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connected in series, they carry the same current, and thus there would be no point whatsoever in rating them differently. The higher rating of one of the switches would be wasted, because the maximum current it could carry would be limited by the lower rating of the other switch. The same applies to switches 150 and 152, which are also connected in series together with inductance 138 across the supply. Since the set of switches 148, 154 and the set of switches 150, 152 are connected between the same two supply rails 144, 146, the two sets carry the same current. Rating them differently would make no sense and would serve no purpose.

The Office Action alleges that it would have been obvious to use differently rated sets of switches in Young's Figure 2 "to provide overcurrent protection." Differently rated switches would not provide overcurrent protection, however, because in the event of overcurrent, the lower rated switches would be damaged and the Young device would cease to function properly even if the higher rated switches accommodated the overcurrent and themselves individually continued to function properly. Thus, the motivation to combine references set forth in the Office action does not apply; there is no proper motivation to combine Starkie and Young to reach the claimed invention.

**Switch Connections**

Independent claim 1 also is amended to clarify that one switch of each set is connected between the supply and a first end of the phase winding, and another switch of each set is connected between the supply and a second end of the phase winding. Starkie's switch sets 23, 25 are not arranged in relation to winding 15 and supply 13 in this manner. Applicant submits

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that the 35 U.S.C. § 102(b) rejection over Starkie is improper and that Starkie and Young are not properly combinable to reach the claimed invention.

Generating Mode

Multiple claims recite a generating mode, wherein current is supplied to the phase winding via the recited second set of switches and is returned to the supply via the first set of switches. Note, for example, dependent claim 2, lines 3-5, independent claim 12, lines 7-9, independent claim 14, lines 7-9 and independent claim 15, lines 7-8. Also note dependent claim 3, which recites a generating mode in the last line. The prior art fails to teach or suggest this feature.

Specifically, Young does not disclose a generating mode at all. Young does not even contemplate a generating mode. Young relates to a motor for a washing machine in which current generation (in the sense of returning current to the supply, as claimed) is not a consideration at all. In fact, in the paragraph beginning at column 8, line 49, and more specifically lines 56-58 thereof, Young specifically prevents motor back EMF from charging the rail (that is, returning current to supply) when operation of the motor is disabled. In this instance, the lower switches 152, 154 (shown in Figure 2) are switched on, de-energizing the phase winding to halt rotation of the rotor to protect the rail. Thus, at no time, not even during braking, is current returned to the supply. Young thus clearly contains no teaching whatsoever of the claimed generating mode. Because Young does not disclose or contemplate a generating mode, it cannot disclose reversing the direction of the current switches in a generating mode, as claimed.

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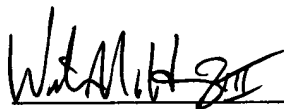
Conclusion

In view of the foregoing, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are requested. The Commissioner is hereby authorized to grant any extensions of time and to charge any fees under 37 C.F.R. § 1.16 and § 1.17 that may be required during the entire pendency of this application, or to credit any overpayment, to Deposit Account No. 500471.

The Examiner is invited to telephone the undersigned to advance prosecution.

Customer No. 025281  
DICKE, BILLIG & CZAJA, PLLC  
Fifth Street Towers, Suite 2250  
100 South Fifth Street  
Minneapolis, MN 55402  
Telephone: (612) 573-2010  
Facsimile: (612) 573-2005

Respectfully submitted,



William M. Hienz III  
Reg. No. 37,069

*Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 500471.*

CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 8<sup>th</sup> day of December, 2005.

By   
Name: William M. Hienz III